

Fracking

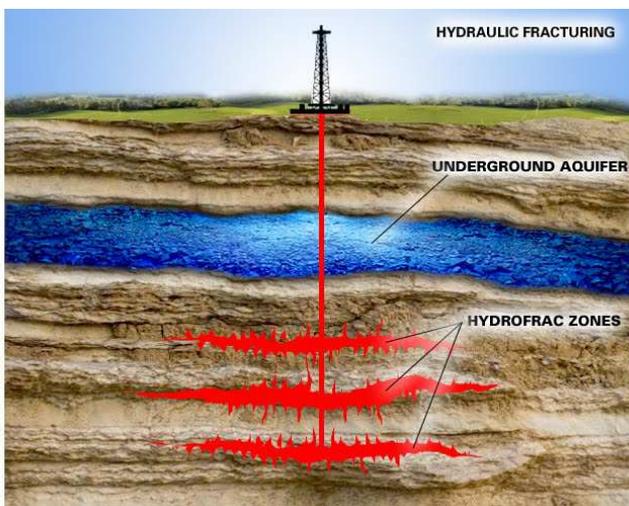
Short for hydraulic fracturing. This is a process of fracturing deep shale rocks to release the trapped gas. In the exploration phase a deep well is drilled between several hundred metres to perhaps 1 - 2 km depth. Horizontal drilling is driven into the shale rock in a number of different directions. Fresh water is then pumped at high pressure into the well to fracture the rock allowing the gas to flow back to the surface. Sand and various chemicals are included in the water to hold the fractures open and ensure a continuous flow of gas.

If the gas flow is determined to be viable a number of other wells are drilled (usually about 1 km apart) and then fractured. The drilling rig is eventually replaced by a quantity of production units on the surface which will continue to pump water and chemicals to recover the gas. A production site could involve clusters of 4 - 10 wells. Each well would require approximately 0.5 - 1 hectares. It is anticipated a production site may operate for 20 - 25 years with a refracking requirement every 4 - 5 years.

Shale gas wells require a regular supply of fresh clean water, estimated by some sources at several million litres per day, and large quantities of chemicals. The impact of transporting such quantities over roads converging on the drill site over the period of exploration and then potentially many years of production would be considerable. This impact would require consideration at the original planning application stage.

A large percentage of the injected water is returned to the surface as a heavily polluted sludge, requiring temporary on-site storage and eventual disposal. Delivery of the fresh water, disposal of the sludge and transporting the recovered gas would require either a considerable pipeline network or a heavy usage of road vehicles.

Because of the impact of fracking a number of countries have banned the process or at least introduced a moratorium pending further research. These include France, Denmark, Germany, Bulgaria, Romania, Czech Republic and the Netherlands. However, fracking is now a big business in Australia and the USA.



A typical fracking exploration well on a site above an aquifer.

(N.B. not all fracking sites will be drilling through an underground aquifer). The water/gas mixture is returned to the surface through the well tubing as a sludge.

Separation takes place on the surface.